In the claims:

Claims 1-7 cancelled.

8. (new) A method for correcting a sensor system selected from the group consisting of an angle-measuring sensor system, a distance-measuring sensor system, and both, comprising the steps of evaluating sinusoidal and cosinusoidal measurement signals (x_i y_i) obtained by scanning a moved measurement object in a magnetic field; correcting errors of the measurement signals (x_i y_i) selected from the group consisting of a angle errors, phase errors, and both; providing for the correcting the sensor system a compensation process and a subsequent correction process; in the compensation process, providing offset values (x_o, y_0) from a specified number (N of j=1...N) of pairs of measured values (x_i, y_i) obtained by rotating a magnetic field, for the sinusoidal and cosinusoidal measurement signals (x_i y_i) and correction parameters (m_1, m_2) by applying the least squares of errors method and solving a linear system of equations; determining a corrected pair of measured values (x_i' y_i') from each pair of the measured values (x_i y_i) in the correction process, whereby determining the corrected pair of the measured values (x_i' y_i') in the correction process based on the relationship

$x_i' = x_i - x_0$ and $y_i' = m_1 \cdot x_i' + m_2 (y_i - y_0)$, whereby

determining the pair of measured values (x_i y_i) in the compensation process located on ellipses and satisfying the following equation:

$f(x,y) = w_1 \cdot x^2 + 2 \cdot w_2 \cdot x \cdot y + w_3 \cdot y^2 + 2 \cdot w_4 \cdot x + 2 \cdot w_5 \cdot y\ 1,$

whereby determining parameters of an ellipse ($w_1 \ldots w_5$) using the least square of errors (g) method, with

$$g = \sum_{i=1}^{N} f(x_i, y_i)^2 = \min.$$

9. (new) A method as defined in claim 8; and further comprising determining an angle (α) to be measured from particular corrected pairs of the measured values (x_i' y_i') using an algorithm.

10. (new) A method as defined in claim 8; and further comprising determining an angle (α) to be measured in the correction process based on the relationship.

11. (new) A method as defined in claim 8; and further comprising determining a derivative of the square of errors (g) with respect to the parameters of the ellipse (w_1 . . . w_5), and setting a particular derivative equal to zero, to determine a minimum, and using the particular derivatives to create a linear system of equations, so that, using a suitable

elimination process, the system of equations is solved for required parameters of the ellipse ($w_1 \ldots w_5$) and, based on this, the offset values (x_0, y_0) and the correction parameters (m_1, m_2) are determined.

12. (new) A sensor system for correcting carrying out a method for correcting a sensor system selected from the group consisting of an angle-measuring sensor system, a distance-measuring sensor system, and both, comprising the steps of evaluating sinusoidal and cosinusoidal measurement signals (x_i y_i) obtained by scanning a moved measurement object in a magnetic field; correcting errors of the measurement signals (x_i y_i) selected from the group consisting of angle errors, phase errors, and both; providing for the correcting the sensor system a compensation process and a subsequent correction process; in the compensation process, providing offset values (x_o, y_0) from a specified number (N of j=1...N) of pairs of measured values (x_i, y_i) obtained by rotating a magnetic field, for the sinusoidal and cosinusoidal measurement signals (x_i y_i) and correction parameters (m_1, m_2) by applying the least squares of errors method and solving a linear system of equations; determining a corrected pair of measured values (x_i' y_i') from each pair of the measured values (x_i y_i) in the correction process, whereby determining the corrected pair of the measured values (x_i' y_i') in the correction process based on the relationship

$$x_i' = x_i - x_0 \text{ and } y_i' = m_1 \bullet x_i' + m_2 (y_i - y_0),$$

whereby determining the pair of measured values (x_i y_i) in the compensation process located on ellipses and satisfying the following equation:

$f(x,y) = w_1 \bullet x^2 + 2 \bullet w_2 \bullet x \bullet y + w_3 \bullet y^2 + 2 \bullet w_4 \bullet x + 2 \bullet w_5 \bullet y\ 1$,

whereby determining parameters of an ellipse ($w_1 \ldots w_5$) using a least square of errors (g) method, with

$g = \sum_{i=1}^{N} f(x_i, y_i)^2$ = min; wherein the sensor system, together with a compensation and evaluation circuit for correcting the measured values, is installed on an integrated microchip.

13. (new) A sensor system as defined in claim 12, wherein said microchip with said sensor system and said compensation and evaluation circuit includes interfaces for variables selected from the group consisting of data, parameters and both for elements selected from the group consisting of an input, an output, and both.

14. (new) A sensor system as defined in 12, wherein said microchip with said sensor system and said evaluation circuit is configured as a steering angle sensor in a motor vehicle.